

**TECHNICAL STATEMENT
RE: CONSTRUCTION PERMIT CERTIFICATIONS
WMEL-LD 2.34 KW-DA 193.5 AMSL CH. 13
GRENADA, MISSISSIPPI**

INTRODUCTION

Legacy Broadcasting of MS (“Legacy”), the licensee of digital low power television station WMEL-LD Channel 13, Facility ID No. 16828, is seeking authority to change the station’s transmitter site, install a new directional antenna and operate with additional power. WMEL-LD does not need to rebut the presumption that its current facilities were temporarily constructed as the station has been operating continuously with its licensed parameters for more than 12 months. However, the station recently experienced a technical problem that required going silent on October 14, 2023 under Special Temporary Authorization.¹ It has been determined that the existing antenna and transmitter require replacement and, therefore, Legacy intends to restore service using the technical parameters proposed in this application. For this reason expedited application processing is respectfully requested.

All calculations, elevations and other technical data provided herein have been determined in accordance with the technical standards of the Federal Communications Commission (FCC), unless specifically stated otherwise.

BROADCAST FACILITY MODIFICATION

Legacy proposes to side mount its new Channel 13 antenna on an existing FCC registered tower that is situated 33.0 kilometers (20.5 miles) from the reference coordinates of the existing station’s antenna location.² The new antenna to be employed is a Jampro Model JSL-4V / D13 SEC, which is an elliptically polarized directional antenna with 0.5 degrees

¹ See FCC LMS File No. 0000223252 - Suspension of Operations and Silent Authority of a LPTV Station Application filed on October 18, 2023.

² See FCC LMS File No. 0000200589 - The reference location of WMEL-LD’s existing antenna location is 33-46-45.0 NL, 089-49-33.0 WL.



electrical beam tilt. The antenna radiation center height will be 193.5 meters above mean sea level (AMSL) as reflected in [Figure 1](#). The station will operate at a maximum effective radiated power (ERP) of 2.34 kW and it will employ a simple out-of-channel emission mask filter.

As stated above, the proposed change in antenna location is not greater than 48 kilometers (30 miles). The contour map included as [Figure 2](#) demonstrates the proposed protected contour will overlap the protected contour of the present facility. Therefore, this application is eligible for processing under the normal procedures governing minor changes to digital low power television and TV translator stations.³

INTERFERENCE PROTECTION

A detailed *TVStudy* analysis has been performed and the results indicate no interference check failures were found. A copy of the analysis summary is provided in [Figure 3](#). This analysis confirms that a grant of this application will not result in any new interference to other prior authorized stations in accordance with the requirements in 47 C.F.R. §§ 74.709, 74.793(e), 74.793(f), 74.793(g) and 74.793(h).⁴ The summary further reflects that the following analysis settings were used:

Study cell size:	1.0 kilometer
Profile point spacing:	0.2 kilometer

ENVIRONMENTAL IMPACT

The specified FCC registered structure is an existing guyed tower that was constructed before March 16, 2001.⁵ Given that the proposed collocation of the new Channel 13 antenna

³ See 47 CFR § 74.787 – Digital licensing of low power television and TV translator stations. The proposed change in transmitting antenna location is not greater than 48 kilometers and the resulting protected contour will overlap some portion of the protected contour associated with the existing station.

⁴ *TVStudy* Program - Version 2.2.5 was utilized to evaluate this proposal based on the default Interference Check template normally used for application processing. The following analysis settings were used: cell size = 1.0 km; terrain profile resolution = 0.2 km increments or 5 points / km.

⁵ See 47 CFR Part 1, App. B, § III.A. An antenna may be mounted on an existing tower constructed on or before March 16, 2001 without such collocation being reviewed through the Section 106 process set forth in the NPA, unless (1) the mounting of the new antenna will result in a substantial increase in the size of the tower as defined in Stipulation I.E.; (2) the tower has been determined by the FCC to have an adverse effect on one or more historic properties; (3) the tower is the subject of a pending environmental review or related proceeding before the FCC involving compliance with Section 106; or, (4) the tower owner has received written or electronic notification that the FCC is in receipt of a complaint from that the collocation has an adverse effect on one or more historic properties.



will not result in a substantial increase in the size of the existing tower,⁶ the criteria outlined in 47 CFR § 1.1307(a) for certain types of facilities that may significantly affect the environment do not apply. With regard to the rules for limiting human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), this application seeks authority to operate a low power television broadcast antenna in full compliance with those guidelines as described in more detail below. The following technical specifications are proposed:

Frequency :	210 - 216 MHz (VHF Channel 13)
Effective Radiated Power:	2.34 kW H-Pol; 2.00 kW V-Pol
Antenna Type:	Directional (Jampro Model JSL-4V / D13 SEC)
Antenna Polarization:	Elliptical
Rotation:	342 degrees
Antenna Height:	86.9 meters AGL
Location coordinates:	33-32-21.0 NL, 090-02-08.0 WL (NAD83)
Site elevation:	106.6 meters AMSL
FCC ASRN:	1041937, Constructed in 1976

Using the methodology for predicting power density levels for television broadcast antennas outlined in OET-65, the above parameters are estimated to produce a maximum power density of 3.22 $\mu\text{W}/\text{cm}^2$ at points 2 meters above ground (approximate human head height).⁷ This power density calculation was derived from OET-65 Equation 10 shown below.

$$S = \frac{33.4 (F^2) ERP}{R^2}$$

⁶ See 47 CFR Part 1, App. B, § 1.E. A substantial increase in size means: “(1) The mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or (2) The mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or (3) The mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or (4) The mounting of the proposed antenna would expand the boundaries of the current tower site by more than 30 feet in any direction or involve excavation outside these expanded boundaries. The current tower site is defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site.”

⁷ FCC Office of Engineering and Technology, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields, OET Bulletin 65, Edition 97-01 (1997) (OET-65).



Where: S = power density in $\mu\text{W}/\text{cm}^2$

F = relative field factor

ERP = power in watts

R = distance in meters

The VHF antenna to be utilized has less than 0.4 relative field at all angles greater than 10 degrees below the horizontal and thus this worst-case value was used to calculate the above maximum power density. The maximum exposure limits applicable to Channel 13, as set forth in 47 CFR § 1.1310 for uncontrolled and controlled situations, are $200 \mu\text{W}/\text{cm}^2$ and $1,000 \mu\text{W}/\text{cm}^2$ respectively. Because the worst-case exposure level determined for the proposed facility is not more than 5 percent of those guidelines and considering the requirements for signage and access control will be implemented as appropriate for compliance with the new rules adopted in the *RF Report and Order*, no further showing of compliance with the RF exposure rules appears to be necessary.⁸ For all the reasons stated above, this minor change application has been found to comply with the criteria in 47 CFR § 1.1307(a) and (b) and thus does not require further environmental processing in accordance with 47 CFR § 1.1306.

Respectfully submitted,

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October 20, 2023

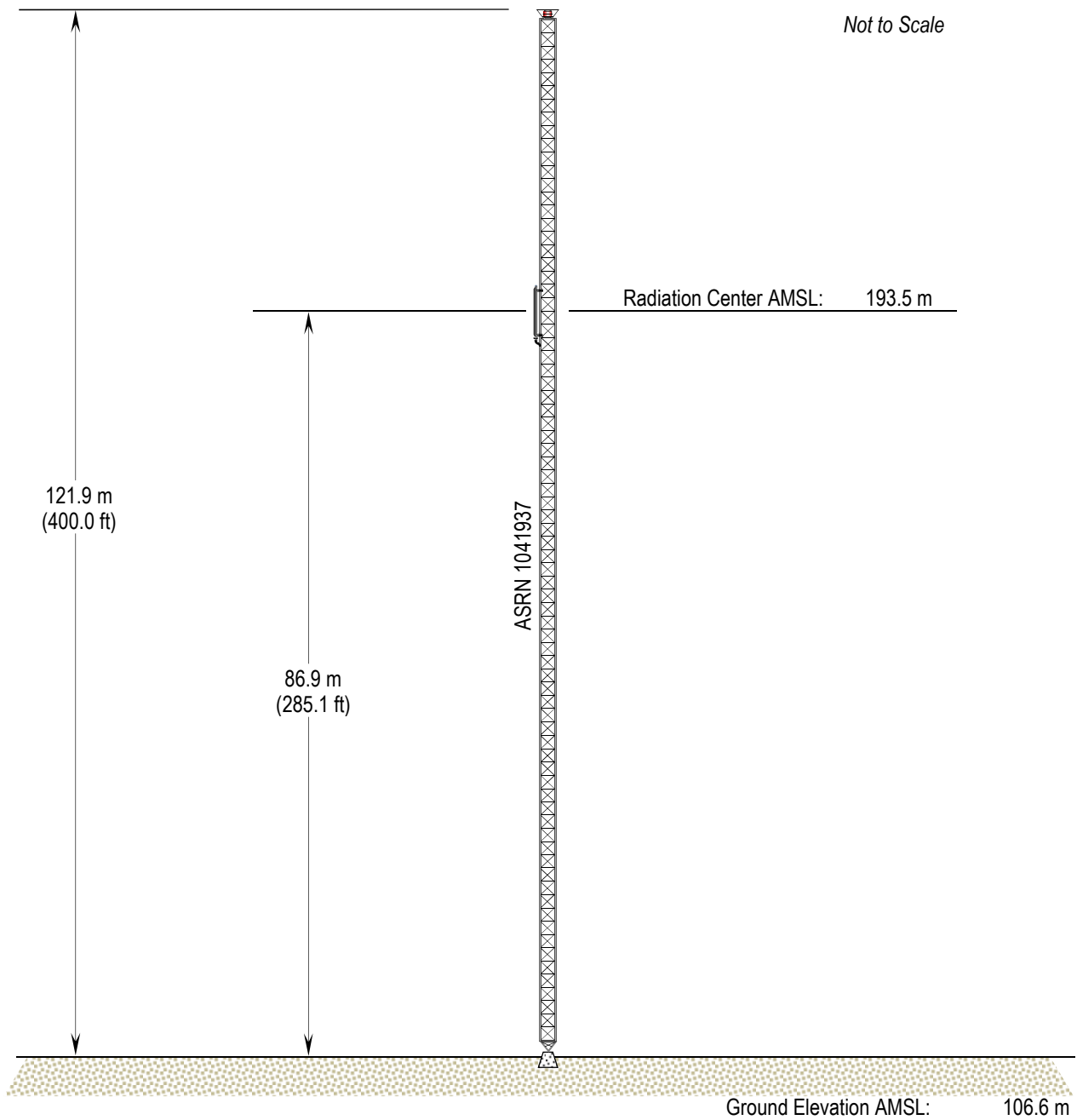
Attachments

Figure 1 – Antenna Sketch

Figure 2 – Contour Map

Figure 3 – *TVStudy* Analysis Summary

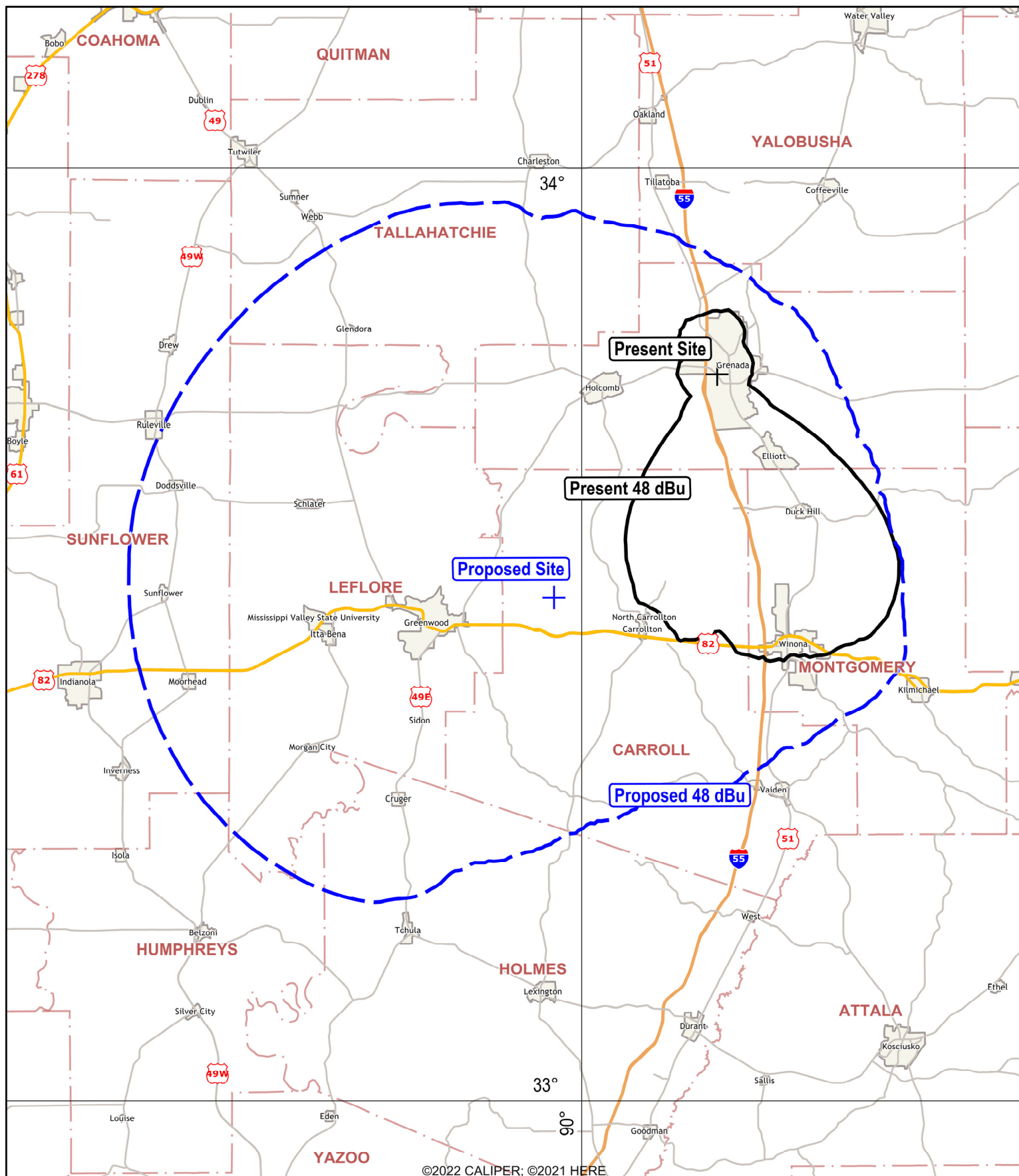
⁸ *Proposed Changes in the Commission's Rules Regarding Human Exposure to Radiofrequency Electromagnetic Fields; Reassessment of Federal Communications Commission Radiofrequency Exposure Limits and Policies*, ET Docket No. 19-226, Resolution of Notice of Inquiry, Second Report and Order, Notice of Proposed Rulemaking, and Memorandum Opinion and Order, 34 FCC Rcd 11687 (2019) (*RF Report and Order*).



NAD83 Site Coordinates
 N. Latitude: 33-32-21.00
 W. Longitude: 90-02-08.00

Ground Elevation AMSL: 106.6 m

FIGURE 1
 ANTENNA SKETCH
 WMEL-LD 2.34 KW-DA 193.5 M AMSL CH. 13
 GRENADA, MISSISSIPPI



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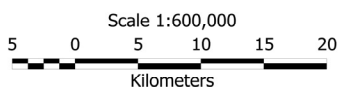


FIGURE 2
WMEL-LD CONTOUR MAP
PRESENT - LMS FILE NO. 0000200589
PROPOSED - 2.34KW-DA 193.5 M AMSL
GRENADA, MISSISSIPPI

October 2023

FIGURE 3
Analysis Results Summary
TVStudy Version 2.2.5.

Study created: 2023.10.20 09:06:12

Study build station data: LMS TV 2023-10-19 #444

Proposal: WMEL-LD D13 LD APP GRENADE, MS
File number: WMEL-LD13 LEFLORE 2340W JAM-342
Facility ID: 16828
Station data: User record
Record ID: 897
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KTHV	D12	DT	LIC	LITTLE ROCK, AR	BLANK0000150693	266.4 km
No	WPRO-LD	D12	LD	LIC	CLARKSDALE, MS	BLANK0000084343	85.5
Yes	WJTV	D12	DT	LIC	JACKSON, MS	BLGDT20111014ABR	148.4
Yes	KEIG	D13	DT	LIC	ARKADELPHIA, AR	BLEDT20100308ACG	287.4
No	KEWV	D13	DT	LIC	MOUNTAIN VIEW, AR	BLEDT20100608AGU	326.1
No	WBRZ-TV	D13	DT	CP	BATON ROUGE, LA	BLANK0000189587	376.6
No	WBRZ-TV	D13	DT	LIC	BATON ROUGE, LA	BLGDT20110420ABI	376.6
No	KLTM-TV	D13	DT	LIC	MONROE, LA	BLEDT20090619ABS	241.5
Yes	WTKR-TV	D13	DT	LIC	MERIDIAN, MS	BLANK0000124908	184.0
No	WYVO-LD	D13	LD	LIC	PASCAGOULA, MS	BLANK0000144005	361.4
No	WRGB	D13	DT	LIC	CHAATTANOOGA, TN	BLANK0000212015	469.2
Yes	WHBQ-TV	D13	DT	LIC	MEMPHIS, TN	BLGDT20100917AAG	182.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D13
Mask: Simple
Latitude: 33 32 21.00 N (NAD83)
Longitude: 90 2 8.00 W
Height AMSL: 193.5 m
HAAT: 0.0 m
Peak ERP: 2.34 kW
Antenna: Jampro JSL-4 Prostar 342.0 deg
Elec Pattn: Generic
Elec Tilt: 0.50

48.0 dBu contour:
Azimuth ERP HAAT Distance
0.0 deg 2.06 kW 114.9 m 45.4 km
45.0 2.31 98.7 43.7
90.0 1.41 105.8 41.4
135.0 0.307 104.5 30.9
180.0 0.225 105.0 29.0
225.0 1.14 151.8 45.7
270.0 2.22 152.8 50.5
315.0 2.05 153.6 50.1

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 123 m

Distance to Canadian border: 1108.8 km

Distance to Mexican border: 1071.1 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 84.3 degrees Distance: 492.4 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 302.8 degrees Distance: 1533.5 km

Study cell size: 1.00 km
Profile point spacing: 0.20 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

No IX check failures found.